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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,263	02/24/2004	Kosuke Yamaguchi	09812.0410	8885

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EXAMINER
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ART UNIT	PAPER NUMBER
2628	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Office Action Summary	Application No.	Applicant(s)
		10/785,263	YAMAGUCHI ET AL.
		Examiner	Art Unit
		Michelle K. Lay	2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _13 April 2007_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,4,9,12,17 and 20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,4,9,12,17 and 20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _4-13-07_

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

04/13/2007 has been entered.

Response to Amendment

The amendment filed 04/13/2007 has been entered and made of record. Claims

2, 3, 5-8, 10, 11, 13-16, 18, and 19 have been cancelled. Claims 1, 4, 9, 12, 17, and 20

are pending.

Response to Arguments

Applicants' arguments filed 04/13/2007 have been fully considered but they are

not persuasive. Applicants' argues Ono in view of Lines fails to teach or suggest a

three-dimensional object manipulating apparatus including "axis determination means

for determining an axis of rotation of the three-dimensional object as a first line through

a center of the display screen perpendicular to a second line from the detected

coordinate through the center of the display screen". Examiner respectfully disagrees.

Ono teaches an axial rotation angle calculation circuit (18) that performs calculations to

determine the three degrees of freedom to be used for controlling the posture of object

in three-dimensional space [col. 3 lines 1-5; Fig. 1b (18)]. With reference to Fig. 4a, the

rotation about an axis is defined by the center O of the surface (22) (said *first line*) [col.

3 lines 50-65]. Furthermore, as shown in Fig. 2, the surface (22) and three-dimensional

model (21) is in the center of display (6). Therefore, with the axis of rotation defined by

the center O, and the model displayed in the center of the display, the axis of rotation is

through the center of the display. It would have been obvious to one of ordinary skill in

the art to center the three-dimensional object (21) on display (6) to have better use of

the display real estate. Also, the center of the display is typically the point of view of the

user. Having the three-dimensional model in the center of the display puts ease on the

viewer. Additionally, with reference to Fig. 4c, the object rotates about the axis O-P0 by

rotation angle by specify point P0 and then determining points P2 and P3. Points P2

and P3 determines the second axis of rotation (said *second line*), which is

perpendicular to the first axis O-P0 and goes through the center of the display.

Information Disclosure Statement

The information disclosure statement filed 04/13/2007 fails to comply with 37

CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it

is presently understood by the individual designated in 37 CFR 1.56(c) most

knowledgeable about the content of the information, of each patent listed that is not in

the English language. It has been placed in the application file, but the information

referred to therein has not been considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1.   Claims **1**, **4**, **9**, **12**, **17**, and **20** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ono et al. (5,588,097) in view of Lines et al. (5,557,714).

Ono teaches the limitations of claims **1**, **4**, **9**, **12**, **17**, and **20** with the exception of

disclosing stopping rotation when the coordinate detecting means no longer detects a

coordinate defined on the display screen by a user's physical touch on the display

screen. However, Lines teaches a method/system to rotate a three-dimensional model

on a computer display in response to user input, where the point-positioning device can

be a touch screen.

In regards to claim **1**, Ono teaches *a three-dimensional object manipulating*

apparatus, comprising:

- *a display means for displaying a three-dimensional object on the*

  screen of a display unit;

  [Fig. 1 (6, 9); col. 2, line 33 – col. 3, line 27]

- *a coordinate detecting means for detecting a coordinate defined on the*

  display screen by a user's physical touch on the display screen;

Ono teaches [Fig. 1 (5, 6, 7); positional information indicated by user via a

pen (7) on a display screen (6) of the tablet (5), is input to the image

generating section (2); col. 2, line 33 – col. 3, lines 27; col. 3, lines 45-64].

Referring to Fig. 1 of Lines, the pointer-positioning device (104) can be a

touch screen [col. 3 lines 54-60]. The rotation routine enables the computer

system (100) to rotate a three-dimensional model in response to a user

"grabbing" a reference point on the chart with the input device (104), and then

"dragging" that reference point to a new location [col. 4 lines 7-11].

Therefore, it would have been obvious to one of ordinary skill in the art to

implement the touch screen of Lines and use the user's own finger as the

input device instead of the tablet (5) and pen (7) of Ono in order the free the

user from having additional input devices, such as a mouse or stylus.

- ***an axis determination means for determining an axis of rotation of the***

  three-dimensional object as a first line through a center of the display

  screen perpendicular to a second line from the detected coordinate

  through the center of the display screen;

Ono teaches an axial rotation angle calculation circuit (18) that performs

calculations to determine the three degrees of freedom to be used for

controlling the posture of object in three-dimensional space [col. 3 lines 1-5;

Fig. 1b (18)]. With reference to Fig. 4a, the rotation about an axis is defined

by the center O of the surface (22) (said *first line*) [col. 3 lines 50-65].

Furthermore, as shown in Fig. 2, the surface (22) and three-dimensional

model (21) is in the center of display (6). Therefore, with the axis of rotation

defined by the center O, and the model displayed in the center of the display,

the axis of rotation is through the center of the display. It would have been

obvious to one of ordinary skill in the art to center the three-dimensional

object (21) on display (6) to have better use of the display real estate. Also,

the center of the display is typically the point of view of the user. Having the

three-dimensional model in the center of the display puts ease on the viewer.

Additionally, with reference to Fig. 4c, the object rotates about the axis O-P0

by rotation angle by specify point P0 and then determining points P2 and P3.

Points P2 and P3 determines the second axis of rotation (said *second line*),

which is perpendicular to the first axis O-P0 and goes through the center of

the display.

- *a rotation determination means for determining a direction of rotation*

  about the axis of rotation for the three-dimensional object in a

  predetermined cycle on the basis of the coordinate detected by the

  coordinate detecting means; and

  [Fig. 1b (18); axial rotation angle calculation circuit (18) performs calculations

  to determine the three degrees of freedom to be used for controlling the

  posture of object in three-dimensional space; col. 3, lines 1-5].

- *an object rotating means for rotating the three-dimensional object*

  about the axis of rotation in the direction of rotation;

  [Fig. 1 (3); col. 2, line 33 – col. 3, line 27].

Lines teaches *a three-dimensional object manipulating apparatus comprising:*

- *wherein the three-dimensional object stops rotating when the coordinate detecting means no longer detects a coordinate defined on the display screen by a user's physical touch on the display screen.*

  Lines teaches a system/method for rotating the display of a three-dimensional model in response to user manipulation of a pointer-positioning device [col. 3 lines 19-22]. Referring to Fig. 1, the pointer-positioning device (104) can be a touch screen [col. 3 lines 54-60]. The rotation routine enables the computer system (100) to rotate a three-dimensional model in response to a user "grabbing" a reference point on the chart with the input device (104), and then "dragging" that reference point to a new location [col. 4 lines 7-11]. In the example provided by Lines, to rotate the chart (200) displayed on the display device (103), the user first positions the pointer (210) over the reference point (201) and then depresses a predefined mouse button. While depressing the predefined mouse button, the user repositions the pointer (210), effectively dragging the reference point (201). The computer system (100) rotates the chart (200) to match the movement of the pointer (210). When the user releases the predefined mouse button, a signal is sent to the rotation routine that the user desires to cease rotation of the chart (200) [col. 4 lines 7-60]. Although Lines uses the example of a mouse pointer with buttons, Lines does teach the use of a touch screen. It would have been obvious to one of ordinary skill in the art to use the user's finger (said

physical touch) as the input device to manipulate the pointer (210) to rotate

the chart (200). Therefore, as the user touches the touch screen, it acts as

depressing the mouse button. As the user drags his/her finger (i.e. pointer

(210)) while keeping interaction with point (201), computer system (100)

rotates chart (200) to match the movement of pointer (210), i.e. user's finger.

Furthermore, as with the mouse, when the user takes his/her finger off of the

touch screen (i.e. releases mouse button), a signal is sent to the rotation

routine that the user desires to cease rotation of the chart.

It would have been obvious to one of ordinary skill in the art to implement the halting of

rotation when the user's physical touch has been removed as taught by Lines in the

method/system of Ono since the kinesthetic correspondence between the movement of

the pointer positioning device (i.e. user's touch) and the direction of the model's

movement provides the sense of actually rotating the displayed model [Lines: col. 1

lines 31-36].

In regards to claim **4**, Ono et al. teaches *a three-dimensional object manipulating*

apparatus, comprising:

- *a display means for displaying a three-dimensional object on the*
  screen of a display unit,

  [Fig. 1 (6, 9); col. 2, line 33 – col. 3, line 27]

- *a coordinate detecting means for detecting a coordinate defined on the*
  display screen by a user's physical touch;

Ono teaches [Fig. 1 (5, 6, 7); positional information indicated by user via a pen (7) on a display screen (6) of the tablet (5), is input to the image generating section (2); col. 2, line 33 – col. 3, lines 27; col. 3, lines 45-64].

Referring to Fig. 1 of Lines, the pointer-positioning device (104) can be a touch screen [col. 3 lines 54-60]. The rotation routine enables the computer system (100) to rotate a three-dimensional model in response to a user "grabbing" a reference point on the chart with the input device (104), and then "dragging" that reference point to a new location [col. 4 lines 7-11].

Therefore, it would have been obvious to one of ordinary skill in the art to implement the touch screen of Lines and use the user's own finger as the input device instead of the tablet (5) and pen (7) of Ono in order the free the user from having additional input devices, such as a mouse or stylus.

- *an axis determination means for determining an axis of rotation of the three-dimensional object as a first line through a barycenter of the three-dimensional object displayed on the screen perpendicular to a second line from the detected coordinate through the barycenter of the three-dimensional object displayed on the display screen;*

Ono teaches an axial rotation angle calculation circuit (18) that performs calculations to determine the three degrees of freedom to be used for controlling the posture of object in three-dimensional space [col. 3 lines 1-5; Fig. 1b (18)]. With reference to Fig. 4a, the rotation about an axis is defined by the center O of the surface (22) (said *first line*) [col. 3 lines 50-65].

Furthermore, as shown in Fig. 2, the surface (22) and three-dimensional

model (21) is in the center of display (6). Additionally, with reference to Fig.

4c, the object rotates about the axis O-P0 by rotation angle by specify point

P0 and then determining points P2 and P3. Points P2 and P3 determines the

second axis of rotation (said *second line*), which is perpendicular to the first

axis O-P0 and goes through the center of the three-dimensional object (21).

- *a rotation determination means for determining a direction of rotation*

  about the axis of rotation for the three-dimensional object in a

  predetermined cycle on the basis of the coordinate detected by the

  coordinate detecting means; and

  [Fig. 1b (18); axial rotation angle calculation circuit (18) performs calculations

  to determine the three degrees of freedom to be used for controlling the

  posture of object in three-dimensional space; col. 3, lines 1-5].

- *an object rotating means for rotating the three-dimensional object*

  about the axis of rotation in the direction of rotation;

  [Fig. 1 (3); col. 2, line 33 – col. 3, line 27].

Lines teaches *a three-dimensional object manipulating apparatus comprising:*

- *wherein the three-dimensional object stops rotating when the*

  coordinate detecting means no longer detects a coordinate defined on

  the display screen by a user's physical touch on the display screen.

  Lines teaches a system/method for rotating the display of a three-

  dimensional model in response to user manipulation of a pointer-positioning

device [col. 3 lines 19-22]. Referring to Fig. 1, the pointer-positioning device (104) can be a touch screen [col. 3 lines 54-60]. The rotation routine enables the computer system (100) to rotate a three-dimensional model in response to a user "grabbing" a reference point on the chart with the input device (104), and then "dragging" that reference point to a new location [col. 4 lines 7-11]. In the example provided by Lines, to rotate the chart (200) displayed on the display device (103), the user first positions the pointer (210) over the reference point (201) and then depresses a predefined mouse button. While depressing the predefined mouse button, the user repositions the pointer (210), effectively dragging the reference point (201). The computer system (100) rotates the chart (200) to match the movement of the pointer (210). When the user releases the predefined mouse button, a signal is sent to the rotation routine that the user desires to cease rotation of the chart (200) [col. 4 lines 7-60]. Although Lines uses the example of a mouse pointer with buttons, Lines does teach the use of a touch screen. It would have been obvious to one of ordinary skill in the art to use the user's finger (said *physical touch*) as the input device to manipulate the pointer (210) to rotate the chart (200). Therefore, as the user touches the touch screen, it acts as depressing the mouse button. As the user drags his/her finger (i.e. pointer (210)) while keeping interaction with point (201), computer system (100) rotates chart (200) to match the movement of pointer (210), i.e. user's finger. Furthermore, as with the mouse, when the user takes his/her finger off of the

touch screen (i.e. releases mouse button), a signal is sent to the rotation

routine that the user desires to cease rotation of the chart.

It would have been obvious to one of ordinary skill in the art to implement the halting of

rotation when the user's physical touch has been removed as taught by Lines in the

method/system of Ono since the kinesthetic correspondence between the movement of

the pointer positioning device (i.e. user's touch) and the direction of the model's

movement provides the sense of actually rotating the displayed model [Lines: col. 1

lines 31-36].

In regards to claim **9**, claim 9 recites similar limitations as claim 1 and thus, is rejected

with the same basis and rationale as claim 1. Furthermore, it would have been obvious

to one of ordinary skill to interchange a mouse and pointer system with a touch screen

as another means of defining the points on the display.

In regards to claim **12**, claim 12 recites similar limitations as claim 4 and thus, is

rejected with the same basis and rationale as claim 4.

In regards to claim **17**, claim 17 recites similar limitations as claim 1 and thus, is

rejected with the same basis and rationale as claim 1. Furthermore, referring to Fig. 1b,

it would have been obvious for instructions to reside in the memory device (12) in order

to implement the method of Ono.

In regards to claim **20**, claim 20 recites similar limitations as claim 4 and thus, is rejected with the same basis and rationale as claim 6. Furthermore, referring to Fig. 1b, it would have been obvious for instructions to reside in the memory device (12) in order to implement the method of Ono.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Aoki (6,437,798 B1)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle K. Lay whose telephone number is (571) 272-7661. The examiner can normally be reached on Monday-Friday 7:30a-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee M. Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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